

SUMMARY OF EVENTS
OF THE SOIL REMEDIATION PROGRAM
FOR JEFFERSON COUNTY AND
CITY OF BROOMFIELD LANDS
(OPERABLE UNIT 10)

July 6, 1990

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Following is a summary of events that have occurred at the Operable Unit 10 over the past five years. This information was obtained by a search of existing literature and verbal communication with individuals associated with this remedial project.

This is an attempt to update personnel in the Environmental Restoration Division at EG & G Rocky Flats of those activities which have been completed. It also serves as a basis for future planning of actions which must be taken to fulfill the obligations specified by the 1985 Settlement Agreement.

SUMMARY OF EVENTS:

July, 1985: The ammended Settlement Agreement resulting from a 1975 lawsuit filed by Perry S. McKay against Rockwell International, Dow Chemical, and the United States of America required some very specific remedial actions on lands offsite. It is required that Rockwell conduct "...soil sampling, mixing, reseedling (or other processes) and testing ... as are necessary to reduce any such concentrations of plutonium in the soil of such lands to or below the state standard."

Specific actions required by the Settlement Agreement include:

- "1) spring ground preparation (plowing and disking)..."
- "2) drilling grass seed..."
- "3) supplemental mulch..."
- "4) timely irrigation..."
- "5) weed control..."

Further, precautions called for in the agreement require that:

- 1) portable air samplers be located downwind with a control level of 0.06 pCi/m^3 .
- 2) (remedial activities may occur at) wind velocities less than 15 mph, and no vehicles may travel at speeds over 15 mph.
- 3) soil moisture must be greater that 15%.
- 4) a fugitive dust control permit be obtained from CDH. (No. 85JE052L)

In light of this agreement, soil samples were taken from the affected lands in accordance with CDH sampling protocol. Accu-Labs Research, Inc.

analyzed the samples for plutonium, from which those areas contaminated to levels greater than the state standard of 2 d/m/g were identified. It is only these lands, located in Section 7, west of Great Western Reservoir, and in Section 18, west of Mower Reservoir, that the court ordered remedial action applies. The affected area covers approximately 350 acres of land owned by the City of Broomfield and Jefferson County.

May 28, 1986: Jefferson County requested that remedial actions be initiated on the nearly 250 acres of their land. As of May 5, 1988, the City of Broomfield had not requested remedial efforts on their 100 acres of land.

June - July, 1986: 100 acres of Jeffco land in Section 7 was plowed in 150 ft wide strips, each separated by 150 ft. Soil sampling (by CDH protocol) and analysis (by an independent laboratory) indicated that surface plutonium concentrations had been reduced to below the state standard by the plowing efforts.

October - November, 1986: Native grasses were seeded in the Jeffco 100 acre area of Section 7.

June - July, 1987: The Fall, 1986 seeding effort was deemed a failure. The 100 acre area was replowed to kill weeds and prepare the soil for a cover crop of sorghum. In addition, 10 acres of Jeffco land in Section 18 were plowed. Further sampling and testing confirmed that surface plutonium levels were reduced to below the state standards.

November - December, 1987: Weed control activities were made on the 110 acres of Jeffco lands in Sections 7 and 18 under remediation. Winter wheat was planted and mulched.

April, 1988: Further seeding of grasses was completed on the same 110 acres of Jeffco land.

July, 1989: Soils-range scientist Rick Laughten left his position at RFP, creating a temporary void in the offsite soils remediation program.

September, 1989: New replacement Ron Zuck filled the position as soils-range scientist.

November, 1989: Draft Phase Report "Weed Control on Remediation Sites" was completed. In it, a series of test plots to be located on the eastern edge of the RFP was proposed for evaluation of herbicides to be used in the off-site soil remediation program.

January 24, 1990: Jack Kersh sent a letter concerning a recent ruling by the Colorado Water Quality Control Commission (WQCC) regarding surface water flowing through the RFP, and its possible contamination with compounds not included on their list. This prompted concern about the newly proposed test plots in the eastern Buffer Zone for offsite areas. In particular, any unintentional over-application or spills of compounds used in the test plots would be subject to WQCC investigation. It was decided that test plots be relocated from the eastern buffer zone vicinity to the western side of the RFP. This increased the possibility that no off-site surface water or groundwater migration would occur.

March 17, 1990: Ron Zuck submitted the required Jeffco semi-annual report of the status of 1989 remediation and actions for 1990. In it, he outlined a remediation plan to begin immediately for the offsite lands. Actions included killing the prairie dog population, spraying approved herbicide, tilling, seeding of sorghum, mulching, and water truck spraying of the area. Total estimated cost was \$165,000.

April 24, 1990: Ron Zuck completed a Scope of Work calling for removal of approximately 318,000 yd³ of surface soil and replacement of 80,000 yd³ of selected topsoil as part of an overall remediation plan. Much of the cost of this work depends upon the feasibility of shipping low level soil waste materials to Nevada for disposal.

June, 1990: Soils-range scientist Ron Zuck left his position at RFP, creating another temporary void in the offsite soils remediation program.

June 18, 1990: All plans for weed control test plots on the RFP property were abandoned due to recent developments in the RFP Water Management Program.

July, 1990: EG & G has inherited the responsibility of completing the offsite soil remediation since its takeover of the operation and management of the Rocky Flats Plant from Rockwell International in January, 1990. To date, no documented tilling and reseeding efforts have been "unearthed" since April, 1988. A brief visit to the sites yielded very little information of the previously tilled and reseeded areas. The area is covered with weeds, not totally barren and rock infested as previously thought.

Of greatest concern is the lack of required remedial activity over the past two years. More simply put, it has been previously confirmed that plowing the soils will reduce surface plutonium contamination levels below the state standards. However, this will increase fugitive dust levels. In order to contain the dust, grasses must be established. The success of reseeding efforts is dependent upon 1) a reduction of the prairie dog population, 2) the elimination of weeds, which will take what little moisture is available from the planted grasses, and 3) provision of water adequate for the survival of the grasses. Fumigation of the prairie dog population seems inevitable. Weed control is a must, through plowing and herbicides. Further, DETAILED plans of irrigation system location and method need to be outlined in order to realize progress in this program.

As of July 6, 1990, a proposal submitted by the IT Corporation outlined criteria for preliminary, conceptual, and final irrigation system design. It may be necessary to break this proposal into the initial activities of preliminary and conceptual design, and later activities of final design as follows:

I) Initial Activities

A) Preliminary Design

- agricultural engineering / crop uptake rates
- irrigation system type
- water volume and flowrate definition
- water rights
- water supply sources

- B) Conceptual Design
 - method of transport from source to application
 - irrigation system screening and selection
- II) Later Activities
 - (to be completed by a second contractor)
 - A) Final Design
 - planning irrigation setup
 - specifications of selected system
 - bid submittal

In regard to contacts about this project, several individuals were spoken to, and yet very little information was gained:

Pat Backes, Purchasing: No requisition ever crossed her desk for the April 24, 1990 scope of work for the soil removal and remediation. (This would have ranged from \$10 to \$45 million.) The March 17, 1990 Jeffco semi-annual report also contained a remediation plan anticipated at \$165,000. No word has yet been received on a requisition that may have been filled out.

Jan Brodie, ER Division Office: She is interested in tracking a response to Jack Kersh about the January 24, 1990 letter. Ron Zuck responded with an unclear explanation of why the test plot program was stopped. Further clarification is needed. She is being kept informed of the progress made in this matter.

Greg Fess, Legal (DOE): On vacation until July 9, 1990. He is interested in this program and will be of help.

Gary Finstad, Soil Conservation Service: verified that no plowing and seeding has taken place since April, 1988. He suggested that hydroseeding and hydromulching be performed in conjunction with irrigation to allow the grasses to use what little moisture is available. At the present time, seeding is not advised. Perhaps mowing the area might help control the rampant weed growth. This fall would be an excellent time to plant grass, as it will lie dormant until spring.

Ralph Hawes, Clean Water: On vacation until July 9, 1990. He may provide some good input about irrigation regulations and herbicide control.

Chris Woods: He will meet with Greg Fess next week (7/9 - 7/13) about this matter to help us get updated on the prospects of continuing remediation.

Ron Zuck: No previous Colorado address or phone number is available through Employment, Benefits, or Access Control. No Elko, NV address or phone number is available.